

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1, 5 and 6 are pending in the application, with claim 1 being the independent claim. Claims 2-4 and 7 are sought to be cancelled without prejudice to or disclaimer of the subject matter therein. Claims 1, 5 and 6 have been amended. Support for the amendment to claim 1 can be found in the specification on page 6, line 29 to page 7, line 2 and on page 17, lines 14-20. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

I. Supplemental Information Disclosure Statement

Applicants note that a Second Supplemental Information Disclosure Statement is submitted accompanying the Amendment and Reply. Applicants respectfully request the Examiner initial and return a copy of Information Disclosure Statement Forms.

II. Priority

The Office has requested English language translations of the German language priority documents. Applicants submit herewith certified translations of both priority documents for the instant application.

III. Description of the Invention

The present invention relates to novel active compound combinations comprising, a synergistically effective amount of an anthranilamide of formula (I) and at

least one pyrethroid compound of formula (II) wherein the compound of formula (I) and the compound of formula (II) are present in a ratio of from 50:1 to 1:5.

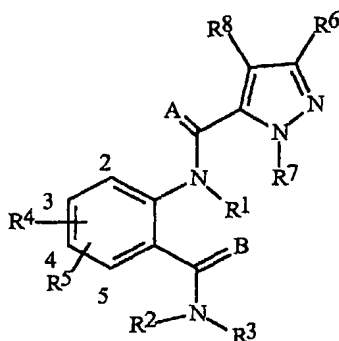
IV. Rejections under 35 U.S.C. § 103(a)

The rejection of claims 1-4, and 7 under 35 U.S.C. § 103(a) as allegedly being unpatentable over WO 03/015518 ("the WO '518 publication"), in view of U.S. Patent No. 6,472,417 ("the '417 patent") and Colby, "Calculating Synergistic and Antagonistic Responses of Herbicide Combinations," *Weeds* 15:20-22 (1966) ("Colby"), is respectfully traversed. In view of the cancellation of claims 2-4 and 7, their rejection is rendered moot.

A. Prima facie Case of Obviousness Has Not Been Established

The Office states that the WO '518 publication discloses a compound of formula I that is identical to the elected species, chlorantraniliprole (coragen) and that chlorantraniliprole can be combined with other pesticidal agents, such as cyfluthrin (a pyrethroid compound). Office Action, pp. 7-8. Applicants respectfully disagree and submit that the Office has not established a *prima facie* case of obviousness.

The WO '518 publication is directed to a very broad genus of compounds of formula I as shown below:



wherein R¹-R⁸ may be a large number of substituents. Thus, the WO '518 publication discloses hundreds of thousands of compounds. The WO '518 publication also generally discloses that compounds of Formula 1 can be mixed with one or more other biologically active compounds or agents, such as insecticides, fungicides, nematocides, bactericides, acaricides, growth regulators, etc. The WO '518 publication mentions hundreds of such insecticides, fungicides, nematocides, bactericides and acaricides.

Thus, the WO '518 publication discloses an infinite number of possible combinations of the anthranilamide compounds of Formula 1 and one or more other biologically active compounds or agents. Even though the WO '518 publication discloses the compound I-1-1, it does not specifically disclose combining the compound I-1-1 with one or more other biologically active compounds or agents. Applicants respectfully disagree with the Offices' statement that "[t]he WO '518 publication teaches that the disclosed compound can be combined with additional active agents, such as cyfluthrin (p. 142, claim 9)." Office Action, p. 9. Claim 9 of the WO '518 publication is directed to a method of controlling insect pests comprising applying a composition comprising a compound of formula I and an additional agent that may be selected from among at least 30 other agents. Therefore, claim 9 recites several thousand possible combinations of a compound of formula I with a variety of different biologically active agents. The present claims, in contrast, recite a synergistic composition comprising a compound of formula I and a pyrethroid selected from the group consisting of compounds 2-1, 2-3, 2-5, 2-6, 2-12, 2-14, and 2-24. The Office has not articulated why a person of ordinary skill in the art would select the listed compounds from among the hundreds of thousands of possible combinations recited by the WO '518 publication. As

acknowledged by the Office, the WO '518 publication does not explicitly state that coragen (chlorantraniliprole) is present in a composition with or used as a pesticide with just a pyrethroid such as cyfluthrin.

The '417 patent does not cure the deficiencies of the WO '518 publication. The '417 patent is directed to a termite control composition for soil treatment containing a 3-cyano-1-(substituted phenyl)-pyrazole derivative and a pyrethroid compound. The compounds disclosed in the '417 patent are of a completely different structure than the anthranilamides of the present invention. Moreover, the primary focus of the '417 patent is to provide compositions that are active against termites after soil treatment. The specific examples and claims of the '417 patent are also directed to termiticidal compositions.

The Office has not provided any reason why a person of ordinary skill in the art would substitute an anthranilamide compound of the WO '518 publication with a pyrazole compound of the '417 patent to achieve the claimed compositions of the present invention. The Office states that coragen is a N-phenyl pyrazole compound, the title of the '417 patent itself allegedly implies that different derivatives of pyrazole would have a synergistic effect when combined with pyrethroid compounds and the N-phenyl pyrazole compound derivatives taught by the '417 patent and coragen both serve as pesticides. Office Action, p. 10-11. According to the Office, it would therefore have been obvious to combine coragen with pyrethroid compounds for a synergistic effect. Applicants respectfully disagree. As discussed above, the '417 patent is directed to termiticidal compositions. The N-phenyl pyrazoles have a structure that is significantly different from the anthranilamides of the present invention. Moreover, the '417 patent does not

provide a person of ordinary skill in the art any reason to substitute the N-phenyl pyrazoles of the '417 patent with the anthranilamides of the present invention. Applicants respectfully submit that the Office is using impermissible hindsight to piece together isolated elements taken from the WO '518 publication's laundry list of mixing partners, and the teachings of the '417 patent, with the aid of Applicants' disclosure to arrive at the presently claimed composition.

The Office also cites Colby to support the proposition that it would also have been *prima facie* obvious for one of ordinary skill in the art to arrive at the ratio range of 50:1 to 1:5 by routine optimization of the amounts of coragen and cyfluthrin, from the values determined by Colby's formula. Office Action, p. 12. Applicants respectfully disagree and submit that the Office is mischaracterizing Colby. Colby only indicates a method of calculating synergistic effect and does not teach a method of picking a combination of two or more insecticides from among the several hundred thousand possible combinations of insecticides listed in the WO '518 publication. Colby does not provide a method of predicting synergism, as indicated by the Office. It would therefore not have been obvious to use Colby to arrive at ratios of pesticides that achieve synergistic effects.

Under *KSR International Co. v. Teleflex, Inc.*, 127 S.Ct. 1727, 82 U.S.P.Q. 2d 1385, 1741 (USSC) (2007), "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was independently known in the prior art." Rather, there must be a reason or rationale behind an obviousness determination and "this analysis should be made explicit." *Id.* Hence, under KSR, the

mere fact that the individual elements, i.e., chlorantraniliprole, and cyfluthrin were independently known in the art does not render the present claim 1 obvious.

In sum, there is nothing in any of the cited references that would have provided a reason for making the composition as recited in the present claim 1. Accordingly, the Examiner has not established a *prima facie* case obviousness of claim 1.

B. *Unexpected Results Rebut Any Prima Facie Case of Obviousness*

Even assuming that a *prima facie* case of obviousness has been established, which it has not, the unexpected insecticidal action exhibited by the claimed compounds is sufficient to overcome any *prima facie* case of obviousness.

Use Examples A-D of the specification recite the superiority of the claimed composition over the cited references. In Examples A-D, cabbage leaves (*Brassica oleracea*) heavily infested with four different pests are treated with a preparation of the active compound at the desired concentrations. The % mortality of the pests is determined after the specified number of days. For example, in Table A2, the kill rate of compounds I-1-9 and 2-12 at concentrations of 0.8 and 0.032 parts per million ("ppm"), respectively, was 0%, individually. However, the two compounds applied in combination at the same concentration produced a kill rate of 45%. Therefore, the kill rate was much higher than the sum of the individual efficacies. A similar result is seen in Tables C1, where compounds I-1-9 and 2-3 each exhibit a kill rate of 0% at 0.0064 ppm each, but a kill rate of 35%, when applied in combination.

Applicants also submit herewith a Declaration under 37 C.F.R. § 1.132 ("Declaration") which recites the unexpected superiority of the claimed invention over WO '518 publication.

In the Declaration, Dr. Wolfram Andersch, an inventor of the present application, recites data from test applications of combinations of compounds according to the present claims and compares it to the compounds applied alone. In the study, cabbage leaves (*Brassica oleracea*) treated with a preparation of the active compound at the desired concentration were heavily infested with two different insects. After the specified period of time, mortality of the insects in % was determined.

(a) *Spodoptera exigua* Test

In the study described in Example 1 of the Declaration, cabbage leaves (*Brassica oleracea*) were treated by being dipped into preparations of tested compounds individually, or with preparations of the claimed compositions. The cabbage leaves were then infested with larvae of the beet army worm (*Spodoptera exigua*). The efficacy of insect control was evaluated after 6 days of the treatment. (Declaration, Example 1 and Table I.)

Table 1 demonstrates that compounds I-1-4 and L-cyhalothrin at individual concentrations of 0.032 parts per million exhibit an efficacy of 20% and 10% respectively. However, when applied in combination, at a 1:1 ratio, the observed efficacy after 6 days is 60%, which is not only much higher than the sum of the individual efficacies, but also much higher than the expected efficacy calculated according to the Colby formula.

(b) *Spodoptera frugiperda* Test

Example 2 of the declaration describes a study wherein cabbage leaves (*Brassica oleracea*) were treated by being dipped into preparations of tested compounds individually, or with preparations of the claimed compositions. The cabbage leaves were

then infested with larvae of the beet army worm (*Spodoptera frugiperda*). The efficacy of insect control was evaluated after 4 days of the treatment. (Declaration, Example 2 and Table 2.)

The results present in Table 2 list the individual and combined efficacies of compounds I-1-4, beta-cyfluthrin and deltamethrin. The results in Table 2 show that a combination of compound I-1-4 with beta-cyfluthrin and deltamethrin exhibits an efficacy much higher than the efficacy of the composition calculated according to the Colby formula.

Therefore, the unexpected results present in the Declaration rebut any *prima facie* case of obviousness of the present claims in view of the WO '518 publication, the '417 patent and Colby. Applicants respectfully request that this rejection be withdrawn.

V. Non-statutory Obviousness-Type Double Patenting Rejection

Rejection of claims 1-3, and 5-6 on the ground of non-statutory obviousness-type double patenting as allegedly being unpatentable over claims 6-7, and 9-10 of co-pending United States Application No. 10/578,512, in view of the '417 patent is respectfully traversed. Applicants respectfully request that the non-statutory double patenting rejection be held in abeyance until allowable subject matter is identified.

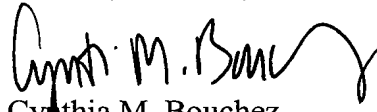
Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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